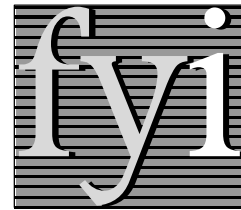


CASE STUDY: Sustainable Building



INFORMATIONAL
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city of seattle justice center



The November 2002 issue of dcluINFO featured a case study on the sustainable building techniques used in Seattle Center's Fisher Pavilion. This month's feature addresses features implemented in the new Seattle Justice Center.

The Seattle Justice Center is the City's second completed building designed to achieve a LEED™ Silver rating. LEED, which stands for Leadership in Energy and Environmental Design, is a national green building system developed by the U.S. Green Building Council. LEED™ addresses building criteria in five environmental categories, including: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.

Designing for a 100-Year Life Span

The new Justice Center replaces the Public Safety Building, which was over 50 years old and seismically deficient. One of the City's goals for the new building was to build a quality structure that would last at least 100

The new Seattle Justice Center at 600 Fifth Avenue in downtown Seattle replaced the 50-year old Public Safety Building, which was functionally and seismically deficient. The Justice Center opened in November 2002 and houses the Seattle Police Headquarters and the Seattle Municipal Court.

years. NBBJ Architects met this goal by designing a simple and elegant building that is both modern and timeless. The design considered future adaptability by using standard dimensions, locating fixed elements in the center, and designing a flexible floor plan to allow for changing functions over time.

The building provides a distinct image for its two tenants, the Seattle Police Headquarters and the Seattle Municipal Court. The Police Headquarters is located on the north end of the building with a stone façade that reflects the integrity, strength and tradition of the police force. The Municipal Court is located further from the curb on the south end of the building and features a public plaza and glass façade on the west side to symbolize the transparency and accessibility of justice.

The City wanted to make the sustainable building elements visible to the public, staff and building visitors. The interior spaces are illuminated with daylight and the open space design provides views and a connection to the outdoors. The interior design is rich and warm

*flexible
floor plan*



*living
roof*

thermal buffer wall

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with a combination of colored plaster, wood panel walls and ceilings. Floor are terrazzo, recycled carpet and stone, and walls and ceiling panels are made of wood. The terrazzo in the central stairwell, on the floor and the countertops contains recycled amber glass.

Saving Energy with Thermal Buffer Wall

To create transparency for the courts the architects used a glass façade—a double-glazed thermal buffer wall—made up of two planes of glass separated by a 30-inch air space. It was designed to reduce energy consumption for lighting, heating, and cooling the building. During the summer solar heat gain is reduced by naturally ventilating the hot air through louvered vents at the top of the thermal wall. In the winter the louvers are closed to create a greenhouse effect and lessen heat loss by trapping warm air in the wall.

The thermal buffer wall also incorporates a light shelf located eight feet above the floor. The shelf serves two functions: it reduces glare, which is controlled by operable shades; and it directs daylight deeper into the office space, thus providing a more comfortable light and reducing the need for artificial light. The lighting system has daylight sensors to adjust the artificial light in response to the amount of natural light that is available.

The lighting design is enhanced with light colored wall and ceiling finishes. When combined with daylight and an indirect lighting scheme with task lighting, the overall design reduces energy use for lighting.

Multi-Functional Green or “Living” Roof

The Justice Center features the first green roof system in a City of Seattle building. It was selected to demonstrate the economic and environmental benefits of this technology, which is commonly used in Europe. A green roof is an engineered system that consists of water-proofing membranes, root barrier, insulation, water retention liner, filter fabric, lightweight planting soil, and plants.

Green roof systems serve multiple functions: they enhance urban esthetics, creating earth’s natural tapestry at a new elevation; they reduce stormwater runoff and the impact to the City’s combined storm/sewer system; they provide a greater insulating capacity to reduce energy use for heating and cooling; and they reduce the “urban heat island effect” because the plants absorb the sun’s energy through photosynthesis. The Justice Center’s green roof is landscaped with plants that are heat-tolerant and drought-resistant, and will not require additional irrigation once they are established.

For more information on the Justice Center visit www.cityofseattle.net/civic/jcenter.htm. To learn about the City’s Sustainable Building Program visit www.cityofseattle.net/sustainablebuilding. To explore DCLU’s work visit or contact:

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daylight
illumination

Water Cascades through Civic Center

Since the Justice Center anchors Seattle’s new Civic Center campus, its open space design was developed as part of the larger campus.

The landscape architects, Gustafson Partners and Swift & Company, are creating a pedestrian-friendly environment that is enlivened by light and water. The design concept seeks to celebrate the flow of water from the

mountains to the Puget Sound.

The Justice Center serves as the headwaters; water cascades down it to the City Hall and Public Safety

Building sites. Rainwater hits the Justice Center roof canopy and drops over the edge onto the rooftop. The water merges with any overflow from the green roof system and is conveyed down through the building into a detention tank. Rainwater is stored for later use when needed to irrigate the landscaping on the Justice Center plaza.

To add aesthetic interest, one section of the facade glass is etched to suggest water cascading down the side of the building to the plaza.

“When the waters again run clear and their life is restored we might see ourselves reflected whole.”

—David Orr, “Earth in Mind: On Education and the Environment”